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MARINE INSECTS OF THE TOKARA ISLANDS

I. MARINE CRANEFLIES (DIPTERA, TIPULIDAE)^{1,2)}

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With 3 Text-figures

The present study was undertaken under the direction of Prof. Dr. Masaaki TOKUNAGA on the materials collected by Messrs. Syōiti MIYAMOTO, Takehiko NAKANE and Shun-ichi UÉNO at the coral reef and rocky shore of the islands.

There have hitherto been known 18 species of marine Tipulids, including 4 Japanese species of *Idioglochina* and *Dicranomyia* respectively. The marine craneflies from the Tokara Islands are identified with *Limonia* (*Idioglochina*) *tokunagai* ALEXANDER and *Limonia* (*Dicranomyia*) *tokara* n. sp. Thus, at present I intend to report a new marine cranefly with its description.

I express my cordial thanks to Prof. Dr. Masaaki TOKUNAGA and Mr. Mitsuhiro SASAKAWA of Saikyo University, for their useful suggestions on this investigation. I am also indebted to Messrs. Syōiti MIYAMOTO, Takehiko NAKANE and Shun-ichi UÉNO, members of the Tokara Expedition, for their kindness in collecting the materials. Further, I wish to express my thanks to Miss Etsuko KŌMYŌ for her kind help given on this study.

1. *Limonia* (*Idioglochina*) *tokunagai* ALEXANDER

1932. Philipp. Jour. Sci., 49: 113-115.

A male specimen; Nakanoshima Island, Tokara Islands; June 10, 1953; Shun-ichi UÉNO leg. A male and a female; June 10, 1953; Syōiti MIYAMOTO leg.

Distribution:—Kii Peninsula, Okinoshima, Danzyo Islands (Kyushu) and Nakano-shima Island.

1) Scientific Survey of the Tokara Islands, Report No. 15.

2) Contributions from the Entomological Laboratory, Saikyo University, Kyoto, No. 23.

2. *Limonia (Dicranomyia) tokara* sp. nov.

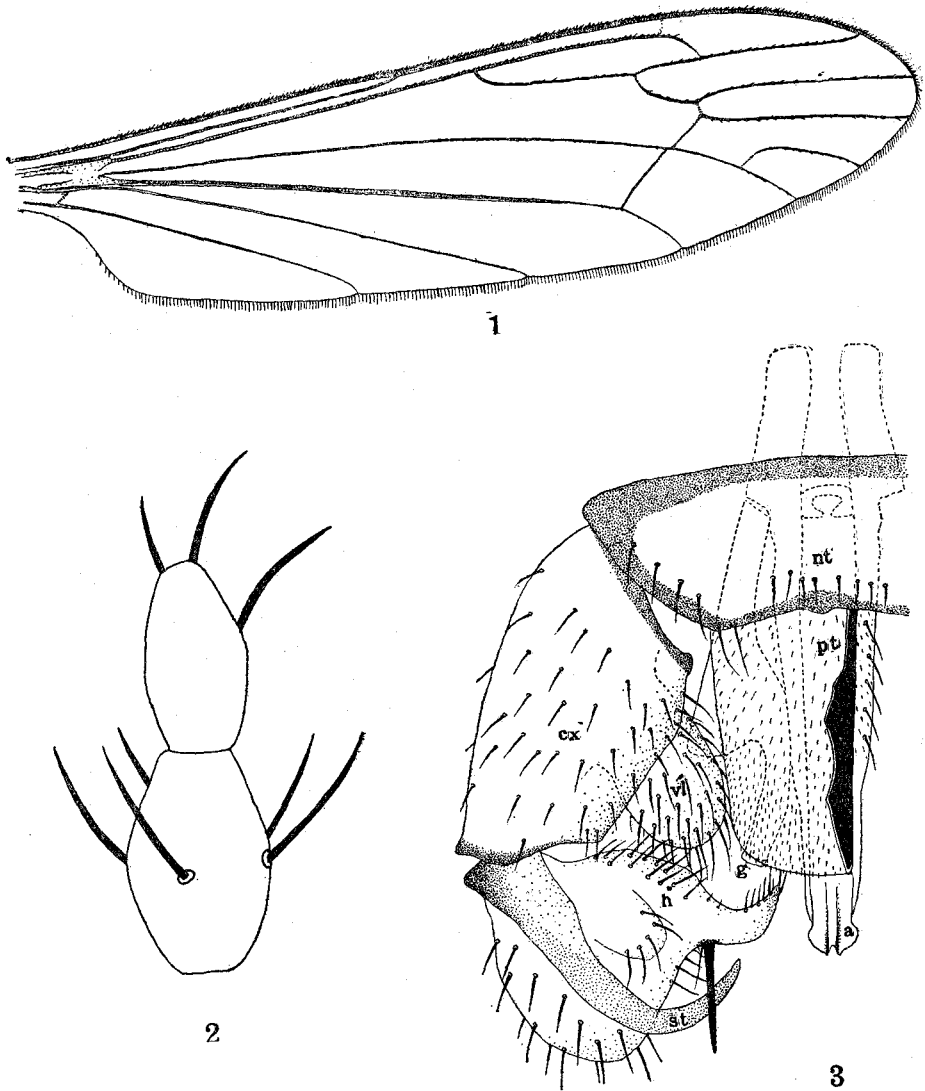
Male.—Body length about 4.5 mm; general coloration of body dirty yellow; mouth-parts and antennae yellowish brown; eyes entirely black; mesopraescutum with longitudinal stripe broadly brown on central part; thoracic notum with lateral brownish stripes extending from middle of mesopraescutum to caudal margin of mesoscutum; pleural side with a dark brown distinct stripe extending from cervical sclerites, through beneath wing and halter, to seventh abdominal segment; abdominal tergites brown and sternites dirty yellow, but in some paratopotypical specimens tergites and sternites brown and with a pale band on caudal margin of each segment.

Head thinly covered with setae; eyes bare; antennae 14-segmented; flagellar segment almost oval, with about five setae; ultimate segment (Fig. 2) slightly smaller than penultimate (1:1.2). Maxillary palpi relatively short. Wings (Fig. 1) about 5.5 mm in length, pale brown and hyaline, stigmal area not clouded; veins brown. Venation: Sc_1 ending before origin of Rs , Sc_2 lacking, $m-cu$ before or at fork of M , median cell opened cross vein being atrophied, Cu_2 closely extending beneath Cu_1 . Halteres yellowish white. Legs brown; coxae, trochanters and basal half of femora paler, proportional lengths of segments of legs, excepting two proximal segments, as follows: 5.3:6.8:4.45:1.5:0.6:0.3:0.3 in fore, 6.2:6.6:3.3:1.45:0.7:0.3:0.3 in middle, and 7.0:7.6:3.6:1.5:0.75:0.35:0.5 in hind leg (1.7 units=1 mm); third and fourth tarsal segments of all legs with a row of apical setae on apical half of ventral side. Claws rather strongly bent at middle and with a long basal tooth. Abdominal octatergum narrow, not subdivided; novatergum with marginal setae on lateral and caudal sides, inverted trapezoid, its caudal margin being shorter than cephalic margin; its caudal margin slightly concave and with a small blunt projection at center. Hypopygium (Fig. 3) with chitinized parts brown; coxite elongate, with setae relatively sparse; ventral lobe of coxite rather broad; style bare, strongly curved at distal part; ventral style with rostral projection which is setigerous apically and provided with a black stout needle-like process; aedeagus comparatively slender.

Female.—Body about 5.5 mm. long, similar in coloration to male, excepting dark brown abdomen. Wings about 5.3 mm long. Proportional lengths of segments of legs as follows: 4.2:5.3:2.95:0.95:0.43:0.3:0.35 in fore, 5.6:5.45:2.35:1.05:0.5:0.35:0.35 in middle, 6.2:6.15:2.9:1.15:0.5:0.3:0.3 in hind leg (1.7 units=1 mm); apical three tarsal segments of all legs with a row of special setae on ventral side; claws comparatively small, with three basal teeth. Hypopygium cerci longer than twice of basal width (2.2:1), octavalvae short, but longer than their basal width (1.5:1).

Habitat.—Tidal zone of the Pacific coast, Ryukyu, Japan.

Holotype.—Male; Nakanoshima Island, Tokara Islands; June 10, 1953; Takehiko NAKANE leg.



Limonia (Dicranomyia) tokara n. sp.

Fig. 1. Male wing.

Fig. 2. Ultimate two segments of male antenna.

Fig. 3. Male hypopygium, dorsal aspect.

Allotopotype:—Female; June 10, 1953; Takehiko NAKANE leg.

Paratopotypes:—72 males and 7 females; June 10, 1953; Takehiko NAKANE leg. 4 males; June 10, 1953; Shun-ichi UENO leg, together with *Limonia* (*Idioglochina*) *tokunagai* ALEXANDER.

Type specimens:—Alcoholic; deposited in the Entomological Laboratory of Saikyo University.

This new marine crane-fly is related to *Limonia* (*Dicranomyia*) *halobia* TOKUNAGA (Amakusa Islands, Japan), but differs from that in the following characters: dark brown stripe of thorax and abdomen, relative size of two distal segments of antenna, specific shape of abdominal tergite of male hypopygium and a strong needle-like process of ventral style of male which is not a seta nor bristle.

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